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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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08/966,985 11/10/97 JACOBSEN J KPN96-03A8

LM02/0225

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EXAMINER

PIZIALI, J

ART UNIT

PAPER NUMBER

2778

DATE MAILED:

02/25/00

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.
08/966,985

Applicant(s)

Jacobsen et al.

Examiner

Jeff Pizlali

Group Art Unit

2778



☒ Responsive to communication(s) filed on Dec 13, 1999

☒ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1035 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claim

☒ Claim(s) 1-27 is/are pending in the applicat

Of the above, claim(s) _____ is/are withdrawn from consideration

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 1-27 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☒ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☒ None of the CERTIFIED copies of the priority documents have been
☐ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☒ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

— SEE OFFICE ACTION ON THE FOLLOWING PAGES —

Art Unit: 2778

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities: the Amendment (filed December 13, 1999) added reference to Application Serial No. 08/961,746 (filed October 31, 1997) of Matthew Zavracky and titled "Color Display with Thin Gap Liquid Crystal." However, Application Serial No. 08/961,746 (filed October 31, 1997) has been issued with the Patent Number 5,896,825 of Lloyd M. Trefethen and titled "Dual Hull Watercraft."

Appropriate correction is required.

Double Patenting

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Art Unit: 2778

3. Claims 1-27 are provisionally rejected under the judicially created doctrine of double patenting over claims 1-27 of copending Application No. 08/741,671. This is a provisional double patenting rejection since the conflicting claims have not yet been patented.

4. Claims 1-27 are provisionally rejected under the judicially created doctrine of double patenting over claims 1-25 of copending Application No. 08/766,607. This is a provisional double patenting rejection since the conflicting claims have not yet been patented.

5. Claims 1-27 are provisionally rejected under the judicially created doctrine of double patenting over claims 1-40 of copending Application No. 08/810,646. This is a provisional double patenting rejection since the conflicting claims have not yet been patented.

6. Claims 1-27 are provisionally rejected under the judicially created doctrine of double patenting over claims 1-5 and 7-19 of copending Application No. 08/853,630. This is a provisional double patenting rejection since the conflicting claims have not yet been patented.

The subject matter claimed in the instant application is fully disclosed in the referenced copending applications and would be covered by any patent granted on those copending applications since the referenced copending applications and the instant application are claiming common subject matter, as follows: a portable communications device having a reflective display

Art Unit: 2778

comprising a device housing having a wireless receiver; an active matrix liquid crystal display having an array of at least 75,000 pixel electrodes and an active area of less than 160 mm²; a lens that magnifies an image on the display; a light emitting diode light source optically coupled to the display; a display control circuit in the housing and that is connected to the wireless receiver, the matrix display and the light source such that image data that is received by the receiver is input to the display control circuit which generates the display signal; and an optical coupler that couples light from the light source onto the matrix display and the reflected light through the lens.

Furthermore, there is no apparent reason why applicant would be prevented from presenting claims corresponding to those of the instant application in the other copending application. See *In re Schneller*, 397 F.2d 350, 158 USPQ 210 (CCPA 1968). See also MPEP § 804.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fan et al. (5,815,126) in view of Crossland et al. (GB 2,149,553).

Art Unit: 2778

Regarding claim 1, Fan et al. discloses a portable communications device having a reflective display comprising a device housing [1] (see Figure 3; Column 5, Lines 60-66) having a wireless receiver [720] (see Figure 31A; Column 16, Lines 25-35); an active matrix liquid crystal display having an array of at least 75,000 pixel electrodes (see Column 3, Lines 31-37) and an active area of roughly 160 mm^2 (see Column 9, Lines 27-28); a lens [1907] that magnifies an image on the display (see Figure 52A; Column 23, Lines 7-11); a light emitting diode light source optically coupled to the display (see Column 2, Lines 56-60); a display control circuit [210] in the housing and that is connected to the wireless receiver (see Figure 2; Column 7, Lines 37-43), the matrix display and the light source such that image data that is received by the receiver is input to the display control circuit which generates the display signal (see Figure 2; Column 7, Lines 30-58); and an optical coupler that couples light from the light source onto the matrix display and the reflected light through the lens (see Figure 52B; Column 23, Lines 12-20). Fan et al. does not disclose expressly an active area of less than 160 mm^2 . However, Crossland et al. discloses a liquid crystal display with an active area of less than 160 mm^2 (see Page 1, Lines 88-90). Fan et al. and Crossland et al. are analogous art because they are from the field of portable communications devices.

Thus, it would have been obvious to a person of ordinary skill in the art, at the time of the invention, to utilize Crossland's liquid crystal display dimensions with Fan's communication device to provide a lighter, more comfortable and more streamlined display.

Art Unit: 2778

Regarding claim 2, Fan et al. discloses the pixel electrodes are reflective pixel electrodes (see Column 2, Lines 56-60) and further comprising a transistor circuit formed with single crystal silicon associated with each pixel electrode (see Column 1, Lines 45-58).

Regarding claim 3, Fan et al. discloses a color sequential display circuit (see Figure 4; Column 8, Lines 49-54).

Regarding claim 4, Fan et al. discloses a switching circuit connected to a counterelectrode panel of the matrix display for switching the applied voltage to the counterelectrode panel (see Figure 4; Column 8, Lines 49-54).

9. Claim 5 and 25-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fan et al. (5,815,126) in view of Crossland et al. (GB 2,149,553) as applied respectively to claims 3 and 2 above, and further in view of Zavracky et al. (5,673,059).

Regarding claim 5, Fan et al. does not disclose expressly the light directing device is a dichroic prism interposed between the lens and the matrix display. However, Zavracky et al. discloses a dichroic prism interposed between a lens and a matrix display (see Column 1, Line 50 - Column 2, Line 6). Fan et al. and Zavracky et al. are analogous art because they are from the field of active matrix display systems.

Art Unit: 2778

Thus, it would have been obvious to a person of ordinary skill in the art, at the time of the invention, to utilize Zavracky's color sequential prism system with Fan's display to provide a color display with reduced visible flicker.

Regarding claim 25, Fan et al. does not disclose expressly the light source is three light emitting diodes of three distinct colors. However, Zavracky et al. discloses a light source that is three light emitting diodes of three distinct colors (see claims 28 and 29). Fan et al. and Zavracky et al. are analogous art because they are from the field of active matrix display systems.

Thus, it would have been obvious to a person of ordinary skill in the art, at the time of the invention, to utilize Zavracky's three light emitting diodes of three distinct colors system with Fan's display to provide a color display with reduced visible flicker.

Regarding claim 26, Fan et al. does not disclose expressly at least one dichroic mirror for directing the light from one light emitting diode and allowing light from another light emitting diode to pass through. However, Zavracky et al. discloses at least one dichroic mirror [210] for directing the light from one light emitting diode and allowing light from another light emitting diode to pass through (see Figure 4; Column 9, Lines 45-58). Fan et al. and Zavracky et al. are analogous art because they are from the field of active matrix display systems.

Art Unit: 2778

Thus, it would have been obvious to a person of ordinary skill in the art, at the time of the invention, to utilize Zavracky's dichroic mirror with Fan's display to provide a color display with reduced visible flicker.

Regarding claim 27, Fan et al. does not disclose expressly the three light emitting diodes are flashed concurrently to emit white light. However, Zavracky et al. discloses the three light emitting diodes are flashed concurrently to emit white light (see Figure 4; Column 9, Lines 45-58). Fan et al. and Zavracky et al. are analogous art because they are from the field of active matrix display systems.

Thus, it would have been obvious to a person of ordinary skill in the art, at the time of the invention, to utilize Zavracky's flashing method with Fan's display to provide a color display with reduced visible flicker.

10. Claims 6-8, 10-19 and 21-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fan et al. (5,815,126) in view of Crossland et al. (GB 2,149,553) and Zavracky et al. (5,673,059).

Regarding claim 6, Fan et al. discloses a portable communications device having a reflective color sequential display comprising a device housing [1] (see Figure 3; Column 5, Lines 60-66) having a wireless receiver [720] (see Figure 31A; Column 16, Lines 25-35); an active matrix liquid crystal display having an array of at least 75,000 pixel electrodes (see Column 3,

Art Unit: 2778

Lines 31-37) and an active area of roughly 160 mm^2 (see Column 9, Lines 27-28); a lens [1907] for viewing the display and spaced apart from the display (see Figure 52A; Column 23, Lines 7-11); a plurality of light emitting diodes (see Column 2, Lines 56-60) that sequentially illuminate the display (see Figure 4; Column 8, Lines 49-54); a color sequential display control circuit in the housing and that is connected to the wireless receiver (see Figure 4; Column 8, Lines 49-54), the matrix display and the light source such that image data is received by the receiver is input to the display control circuit which generates the display signal (see Figure 2; Column 7, Lines 30-58) and sequentially illuminating the display with the light emitting diodes (see Figure 4; Column 8, Lines 49-54); coupling reflected light to the lens (see Figure 52B; Column 23, Lines 12-20); and a battery [529] for powering the display, circuitry and the light emitting diodes (see Figure 31B; Column 14, Lines 54-56). Fan et al. does not disclose expressly an active area of less than 160 mm^2 , or a dichroic prism for directing the light from the light source to the active matrix liquid crystal display. However, Crossland et al. and Zavracky et al. disclose respectively a liquid crystal display with an active area of less than 160 mm^2 , and a dichroic prism for directing the light from a light source to an active matrix liquid crystal display.

Crossland et al. discloses a liquid crystal display with an active area of less than 160 mm^2 (see Page 1, Lines 88-90). Zavracky et al. discloses a dichroic prism interposed between a lens and a matrix display (see Column 1, Line 50 - Column 2, Line 6). Fan et al., Crossland et al. and Zavracky et al. are analogous art because they are from the field of liquid crystal display systems.

Art Unit: 2778

Thus, it would have been obvious to a person of ordinary skill in the art, at the time of the invention, to utilize Crossland's liquid crystal display dimensions and Zavracky's color sequential prism system with Fan's communication device to provide a lighter, more comfortable and more streamlined display, and to provide a color display with reduced visible flicker.

Regarding claims 7 and 15, Fan et al. discloses a diffuser [142] (see Figure 4; Column 9, Lines 21-22).

Regarding claim 8, Fan et al. does not disclose expressly at least one dichroic mirror for directing the light from one light source and allowing light from another light source to pass through. However, Zavracky et al. discloses at least one dichroic mirror [210] for directing the light from one light source and allowing light from another light source to pass through (see Figure 4; Column 9, Lines 45-58). Fan et al. and Zavracky et al. are analogous art because they are from the field of active matrix display systems.

Thus, it would have been obvious to a person of ordinary skill in the art, at the time of the invention, to utilize Zavracky's dichroic mirror with Fan's display to provide a color display with reduced visible flicker.

Regarding claims 10 and 18, Fan et al. discloses a telephone (Figure 31A; Column 16, Lines 25-35).

Art Unit: 2778

Regarding claims 11 and 19, Fan et al. discloses a docking station [557] for a wireless telephone (Figure 33; Column 15, Lines 25-37).

Regarding claim 12, Fan et al. discloses a portable communications device having a reflective display comprising a device housing [1] (see Figure 3; Column 5, Lines 60-66) having a wireless receiver [720] (see Figure 31A; Column 16, Lines 25-35); an active matrix liquid crystal display having an array of at least 640 x 480 array of reflective pixel electrodes (see Column 3, Lines 31-37) and an active area of roughly 160 mm² (see Column 9, Lines 27-28), a transistor circuit formed with single crystal silicon associated with each pixel electrode (see Column 1, Lines 45-58); a lens [1907] that magnifies an image on the display (see Figure 52A; Column 23, Lines 7-11); a plurality of light emitting diodes (see Column 2, Lines 56-60); and a display control circuit [210] in the housing and that is connected to the wireless receiver (see Figure 2; Column 7, Lines 30-58), the matrix display and the light source such that image data that is received by the receiver is input to the display control circuit which generates the display signal (see Figure 2; Column 7, Lines 30-58). Fan et al. does not disclose expressly an active area of less than 160 mm², or a dichroic prism for directing the light from the light emitting diodes to the active matrix liquid crystal display. However, Crossland et al. and Zavracky et al. disclose respectively a liquid crystal display with an active area of less than 160 mm², and a dichroic prism for directing the light from a light source to an active matrix liquid crystal display.

Art Unit: 2778

Crossland et al. discloses a liquid crystal display with an active area of less than 160 mm² (see Page 1, Lines 88-90). Zavracky et al. discloses a dichroic prism interposed between a lens and a matrix display (see Column 1, Line 50 - Column 2, Line 6). Fan et al., Crossland et al. and Zavracky et al. are analogous art because they are from the field of liquid crystal display systems.

Thus, it would have been obvious to a person of ordinary skill in the art, at the time of the invention, to utilize Crossland's liquid crystal display dimensions and Zavracky's color sequential prism system with Fan's communication device to provide a lighter, more comfortable and more streamlined display, and to provide a color display with reduced visible flicker.

Regarding claims 13 and 23, Fan et al. discloses the display control circuit is a color sequential display circuit for sequentially illuminating the display with the light emitting diodes (see Figure 4; Column 8, Lines 49-54).

Regarding claim 14, Fan et al. discloses an array of at least 640 x 480 pixel electrodes (see Column 3, Lines 31-37).

Regarding claims 16 and 22, Fan et al. does not disclose expressly a pair of dichroic mirrors, each mirror for directing the light from one light emitting diode and allowing light from at least another light emitting diode to pass through. However, Zavracky et al. discloses a pair of dichroic mirrors [M1a, M2a], each mirror for directing the light from one light emitting diode and

Art Unit: 2778

allowing light from at least another light emitting diode to pass through (see Figure 17; Column 17, Lines 16-34). Fan et al. and Zavracky et al. are analogous art because they are from the field of active matrix display systems.

Thus, it would have been obvious to a person of ordinary skill in the art, at the time of the invention, to utilize Zavracky's dichroic mirrors with Fan's display to provide a color display with reduced visible flicker.

Regarding claim 17, Fan et al. discloses a camera [555b] (see Figure 33; Column 15, Lines 25-37).

Regarding claim 21, Fan et al. does not disclose expressly the active area is less than 100 mm². However, Crossland et al. discloses a liquid crystal display with an active area of less than 100 mm² (see Page 1, Lines 88-90). Fan et al. and Crossland et al. are analogous art because they are from the field of portable communications devices.

Thus, it would have been obvious to a person of ordinary skill in the art, at the time of the invention, to utilize Crossland's liquid crystal display dimensions with Fan's communication device to provide a lighter, more comfortable and more streamlined display.

Art Unit: 2778

Regarding claim 24, Fan et al. discloses a switching circuit connected to a counterelectrode panel of the matrix display for switching the applied voltage to the counterelectrode panel (see Figure 4; Column 8, Lines 49-54).

11. Claims 9 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fan et al. (5,815,126) in view of Crossland et al. (GB 2,149,553) and Zavracky et al. (5,673,059) as applied respectively to claims 6 and 12 above, and further in view of Kikinis et al. (5,634,080).

Regarding claims 9 and 20, Fan et al. does not disclose expressly a wireless pager. Kikinis et al. discloses a wireless pager [92] (Figure 12; Column 18, Lines 7-20). Fan et al. and Kikinis et al. are analogous art because they are from the field of portable communication devices.

Thus, it would have been obvious to a person of ordinary skill in the art, at the time of the invention, to utilize Kikinis' wireless pager interface with Fan's communication device to offer another commercially popular communication function.

Response to Arguments

12. Applicant's arguments with respect to claims 1-27 have been considered but are moot in view of the new ground(s) of rejection.

Art Unit: 2778

Conclusion

13. The art made of record and not relied upon is considered pertinent to applicant's disclosure. Wilska et al. (GB 2,289,555), Rubincam (4,159,417), Vu et al. (5,256,562), Zavracky et al. (5,642,129), Zavracky et al. (5,751,261), Fukuoka (5,754,227), Swanson et al. (5,889,567), Trefethen (5,896,825), Alvelda (5,940,159), and Vu et al. (6,027,958) are cited to further show the state of the art with respect to reflective displays (as well as dual hull watercrafts).

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

a shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Art Unit: 2778

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeff Piziali whose telephone number is (703) 305-8382. The examiner can normally be reached on Monday - Friday from 6:30 AM to 3 PM E.S.T.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala, can be reached on (703) 305-4938.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-3900.

Any response to this final action should be mailed to:

Box AF

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or faxed to:

(703) 308-9051, (for formal communications; please mark "EXPEDITED
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Or:

(703) 308-6606 (for informal or draft communications, please label
"PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth
Floor (Receptionist).


VIJAY SHANKAR
PRIMARY EXAMINER

28 2/22/00